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Titre du document / Document title

Poly(p-phenylenevinylene) by chemical vapor deposition : synthesis, structural evaluation, glass transition, electroluminescence, and photoluminescence

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Résumé / Abstract

Poly(p-phenylenevinylene) (PPV) was prepared via chemical vapor deposition (CVD) by vapor phase pyrolysis of α,α' -dihalogenated p-xylenes or α,α' -dihalogenated p-xylenes. Differences in the product composition obtained are discussed. The advantages for the film formation as well as the limitations are reported with respect to the fabrication of light-emitting diode (LED) cells. PPV films were characterized by various techniques. They show a glass transition temperature at 220 °C, a hypsochromic shift of the S[1] → S[0] transition and higher degree of disorder as compared to ordinary PPV. The current-voltage characteristics of LED cells with PPV prepared via CVD show an unusually high rectification ratio. In contrast to PPV annealed at lower temperatures the formation of an unidentified defect structure was detected by [13]C CP-MASTOSS spectroscopy with PPV films annealed at higher temperatures.

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